

Docket No. F-8590

Ser. No. 10/524,622

Sir:

Applicants respectfully submit an English translation of paragraphs 0013 and 0016 of Japanese Patent Laid-Open Publication No. 7-40015 ("JP '015"). JP '015 is being utilized to reject the present application and, for example, the content of paragraph 0016 is important. The aforementioned translation has been prepared to facilitate the examination of the above-identified application. Particular attention is directed to paragraph 0016 where it is stated that "[i]f the amount of CaO contained in calcium zirconate clinker is greater than 31 weight %, then it starts to include free CaO, resulting in easy hydration in atmosphere at normal temperature, which is undesirable." This demonstrates the avoidance of free CaO in JP '015.

Respectfully submitted,

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Enc. Translation of paragraphs 0013 and 0016 of JP 7-40015

Japanese Patent Laid-Open Publication No. 7-40015

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Application No.: 5-190299

Filing Date: July 30, 1993

Assignee: SHINAGAWA REFRACT CO. LTD.

[TITLE OF THE INVENTION] NOZZLE FOR CONTINUOUS CASTING

Paragraph [0013]

Preferably, CaB6 has a particle size less than that of calcium zirconate clinker or zirconia. The reason is that by forming the skeleton of the nozzle refractory material from calcium zirconate clinker or zirconia, corrosion after formation of low melting point materials is suppressed. In view of obtaining an adequate refractory skeleton, CaB6 is preferably contained in an amount of 65 weight% or less. The reason is that, due to poor sinterability, CaB6 contained in an amount of greater than 65 weight% causes difficulty in obtaining sufficient strength, and deterioration in corrosion resistance. If the content of CaB6 becomes less than 0.1 weight%, a function as a Ca source cannot be sufficiently obtained. Therefore, the content of CaB6 is preferably in the range of 0.1 to 65 weight%.

Paragraph [0016]

Stabilized or non-stabilized zirconia does not release CaO when it comes in contact with alumina at melting temperature of steel, and therefore by itself has no effect of suppressing the attachment of alumina. In contrast, when calcium zirconate clinker contains CaZrO₃ as a constituent mineral, the zirconia will react with alumina at melting temperature of steel to release CaO. In this case, calcium zirconate clinker plays a role of a CaO source for assisting CaB6. If the amount of CaO contained in calcium zirconate clinker is greater than 31 weight%, then it starts to include free CaO, resulting in easy hydration in atmosphere at normal temperature, which is undesirable. Therefore, the content of CaO in calcium zirconate clinker is set at 31 weight% or less.